

**Amended Claims With Mark-ups to Show Changes Made**

1. (Amended) A voice mail service system for a private switching system, comprising:
  - a system matching circuit configured to couple to a private switching system, so as to interface all information in relation to a call and a management of the call;
  - a voice data memory to provide a voice mail function, and to store voice guide information in an address sector of a corresponding channel [after compressing the voice guide information];
  - a voice and signal processor to store voice data of the extension subscriber in the voice data memory and retrieve it so that the voice data can be transmitted;
  - a communication controller to manage a state of each channel matching with the private switching system, process channel errors, and maintain and repair the channel; and
  - a control circuit to match with the private switching system to control an operation for maintaining the voice mail function.
  
4. (Amended) The system of claim 1, wherein the system matching circuit comprises:
  - an interface section to interface with the private switching system;
  - a buffer to store data transmitted to and received from the private switching system in a prescribed protocol; and

a [common] memory to store call-related messages and data transmitted or received between the private switching system and the control circuit.

5. (Amended) The system of claim 1, wherein the voice data memory has a prescribed storage capacity, which is expandable [configured to be expanded by a unit of memory bank].

Clean Set of Amended Claims

4b  
B1  
1. (Amended) A voice mail service system for a private switching system, comprising:

AI  
a system matching circuit configured to couple to a private switching system, so as to interface all information in relation to a call and a management of the call;

a voice data memory to provide a voice mail function, and to store voice guide information in an address sector of a corresponding channel;

a voice and signal processor to store voice data of the extension subscriber in the voice data memory and retrieve it so that the voice data can be transmitted;

a communication controller to manage a state of each channel matching with the private switching system, process channel errors, and maintain and repair the channel; and

a control circuit to match with the private switching system to control an operation for maintaining the voice mail function.

5b  
B1  
4. (Amended) The system of claim 1, wherein the system matching circuit comprises:

AI  
an interface section to interface with the private switching system;

a buffer to store data transmitted to and received from the private switching system in a prescribed protocol; and

A2 a memory to store call-related messages and data transmitted or received between the private switching system and the control circuit.

5. (Amended) The system of claim 1, wherein the voice data memory has a prescribed storage capacity, which is expandable.

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**B. Please add new claims 25-34 as follows:**

- 5b  
B1
25. (New) A private switching system comprising:  
means coupling call information and management of call information to a switching system;  
means storing voice mail information and voice guide information in a memory;  
means storing data relating to a subscriber in the memory;  
means retrieving data relating to the subscriber and transmitting the retrieved data;  
means managing a state of each channel matching with the switching system;  
means processing channel errors and maintaining and repairing the channel; and  
means controlling and maintaining operation between the switching system and the voice mail service.
26. (New) The system of claim 1, wherein the voice guide information is compressed prior to storage.
27. (New) The system of claim 4, wherein the memory is a common memory.
28. (New) The system of claim 5, wherein the voice data memory is configured to be expanded by a unit of memory bank.

29. (New) The system of claim 1, wherein the voice and signal processor comprises:  
a vocoder coupled to the private switching system through a communication link and a system interface bus, configured to compress and modulate voice signals carried over the communication link;

a storage device to store an algorithm for a compression-modulation and a demodulation of the voice signals by the vocoder;

a first buffer to store the voice signal compressed and modulated by the vocoder and the voice signal outputted;

a first multiple access storage device to maintain a smooth transmission and a smooth reception of the compressed and modulated voice signal, to be stored in the voice data memory and the voice signal outputted; and

a first interface circuit coupled to the vocoder and the first multiple access storage device, so as to arbitrate and control occupations of the system interface bus by the vocoder and the first multiple access storage device.

30. (New) The system of claim 29, wherein the voice and signal processor further comprises:

a Dual Tone Multi-Frequency (DTMF) processor to process and analyze DTMF signals received from a terminal of the extension subscriber or a caller side terminal;

a second storage device to store an algorithm for an operation of the DTMF processor;

a second buffer to temporarily store analyzed DTMF signals;

a second multiple access storage device to prevent a collision between the analyzed DTMF signals and the DTMF signals; and

a second interface circuit coupled to the DTMF processor section and the second multiple access storage device, to arbitrate and control the occupation of a system interface bus.

31. (New) The system of claim 30, wherein the first and second multiple access storage devices respectively comprise banks of memory, each of which store voice data to provide voice mail service and a registration for the voice mail service.

32. (New) A voice mail service system for a private switching system comprising;

means setting a subscriber's message in memory;

means determining a communication state of the subscriber in response to an incoming communication;

means transferring the incoming communication to a system matching section;

means storing the subscriber's message in the system matching section;

means providing guide service to a control section;

means accessing data of the subscriber in the memory by the control section;

means providing the data and a control signal to a processor; and  
outputting the subscriber's message.

33. (New) The system of claim 2, wherein the connection to the private switching system is over a serial bus.

34. (New) The system of claim 32 further comprising:  
an interface section to interface with the private switching system;  
a buffer to store data transmitted to and received from the private switching system in a prescribed protocol; and  
a memory to store call-related messages and data transmitted or received between the private switching system and the control circuit.

#### REMARKS

Claims 1-16 and 19 are pending and claims 25-34 have been newly added. By this Amendment, claims 1, 4 and 5 have been amended. Reconsideration in view of the above amendments and the following remarks is respectfully requested.

Claims 10 and 11 are objected to because the Examiner alleges that these claims are duplicates of claims 8 and 9. Applicant respectfully traverses the rejection.